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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,453	03/19/2001	Johan Smets	CM1910/DQ	2216

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EXAMINER

KUMAR, PREETI

ART UNIT	PAPER NUMBER
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1751

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/787,453	SMETS ET AL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Preeti Kumar	1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-16, 24-27 and 30-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-16, 24-27, 30-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Final Rejection***

1. Claims 1-7, 9-16, 24-27, 30-36 are pending. Claims 30-36 are newly added.
2. Claims 8, 17-23, and 28-29 are cancelled.

***Response to Amendment***

3. The objection to claims 27-29 under 37 CFR 1.75(c) as being in improper form is withdrawn in light of applicant's amendment to the claims.
4. The objection of claims 8-14 and 16-29 is withdrawn in light of applicant's amendment to the claims.
5. The rejection of claims 11-12, 14, 16, and 27-29 under 35 U.S.C. 112, second paragraph, is withdrawn in light of applicant's amendment to the claims.
6. The rejection of claim 10, under 35 U.S.C. 112, second paragraph, is maintained for the reasons recited in the previous office action. Florhydra® is a registered trademark of Givaudan SA. Lyr® is a registered trademark of International Flavors and Fragrances, Inc. A non-patent search did not reveal cymal to be an organic compound. Examiner does not know what compound Applicant is referring to having the name cymal.
7. The rejection of claims 1-9, 14-16 and 24-29 under 35 U.S.C. 102(a) as being anticipated by Fowler et al. (US 6,268,196) is withdrawn in light of applicant's amendments to the independent claims and arguments indicating that Fowler et al. exclude CBD from the cellulase.

8. Claim 1-9, 13-14, 16, 19-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Jones et al. (WO 98/00500) is withdrawn in light of applicant's amendment to the claims requiring the linking region to be a polyethylene glycol derivative.

***Response to Arguments***

9. The rejection of claims 1-5 under 35 U.S.C. 112, second paragraph, is maintained for the reasons recited in the previous office action and elaborated herein.

Claim 1 recites the limitation "said chemical components" in claim 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "wherein all of said chemical components are linked to said amino acid sequence..." in claim 1. Claim 2 fails to further limit the subject matter of claim 1 and furthermore, there is insufficient antecedent basis for this limitation in the claim since claim 1 recites "...said chemical components are covalently linked...".

Claim 3 recites the limitation "wherein at least one of said chemical components is linked indirectly to said amino acid sequence..." in claim 1. Claim 3 fails to further limit the subject matter of claim 1 and furthermore, there is insufficient antecedent basis for this limitation in the claim since claim 1 recites "...said chemical components are covalently linked...".

Claim 4 recites the limitation "wherein at least one of said chemical components is linked directly to said amino acid sequence...and at least one of said chemical components is linked indirectly to said amino acid sequence" in claim 3 dependent on claim 1. Claim 4 fails to further limit the subject matter of claim 1 and furthermore, there

is insufficient antecedent basis for this limitation in the claim since claim 1 recites "...said chemical components are covalently linked...".

Claim 5 recites the limitation "wherein all of said chemical components are linked indirectly via a linking region to said amino acid sequence..." in claim 3 dependent on claim 1. Claim 5 fails to further limit the subject matter of claim 1 and furthermore, there is insufficient antecedent basis for this limitation in the claim since claim 1 recites "...said chemical components are covalently linked...".

10. The rejection of claims 10-12 under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (WO 98/00500) in view of Cao et al. (US 6,025,316) is maintained for the reasons recited in the previous office action.

Applicant's urge that Jones in view of Cao does not teach covalently linked chemical components because the polyethylene glycol linkers taught by Cao link via hydrogen bonding. However, polar covalent bonds allow the formation of hydrogen bonds. For example water has polar covalent bonds to engage in hydrogen bonding. Thus, Cao et al. teaching of polyethylene glycol linkers in the analogous art of linking chemical components to fabrics encompasses the material limitation of the instant claims.

### ***New Grounds of Rejection***

#### ***Claim Objections***

11. Claim 31 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of independent claim 1. The recitation to a weak bond in claim 31 is contradictory to the recitation of a covalent linkage in

independent claim 1. Examiner suggests clearly identifying the subject matter for which patent protection is sought.

***Claim Rejections - 35 USC § 103***

12. Claims 1-7, 9-14, 16, 24-27, 30-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (WO 98/00500) in view of Cao et al. (US 6,025,316).

Jones et al. teach a composition comprising a peptide or protein Deposition Aid having a high affinity for fibers or a surface and attached/adsorbed to the peptide or protein deposition aid a benefit agent. The composition effectively deposits the Benefit Agent onto fabric during the wash cycle. See abstract.

Regarding claims 2-5 and 31, Jones et al. teach that if the peptide/protein Deposition Aid is not an enzyme, it can have a chemical structure similar or identical in structure to that of a binding site of an enzyme. See claim 8. Jones et al. teach that if the benefit is attached to the peptide/protein Deposition Aid, this is via a linking agent. Suitable linking agents are molecules with show a high affinity for the Benefit Agent. It is preferred if the linking agent is covalently attached to the peptide/protein Deposition Aid, it is also advantageous if the linking agent is covalently bound to the Benefit agent. Preferred linking agents are selected from various amino acid linking agents. See pg.7, ln.20-35 & pg.8, ln.1-3 & claims 2-4.

In regard to claim 6-7, 14, and 16, Jones et al. teach the utility of cellulase from *Trichoderma reesei* and *Thermonospora fusca*. See example 4 on page 23.

Specifically regarding claims 24-27, and 30 Jones et al. discloses a fabric care composition comprising a deposition aid having a high affinity for cellulose, which is a

cellulose binding domain derived from cellulase, a benefit agent, a surfactant and a protease. See pages 4-8.

Regarding claims 9, 13 and 32, Jones et al. teach a preferred benefit agent is selected from a fabric softening agent, a perfume, a latex, a resin, an insecticide, a soil release agent, or a soil repelling agent. See pg.5 ln.5-15; pg.7, ln.12-16; pg.13, ln.20-30; pg.15, ln.20-30, & claim 10.

Regarding the aldehyde based perfume, a hygiene agent or insect control agent as specified by the instant claims 10-12, Jones et al. teach an encapsulated perfume or insect repellent benefit agent and suggest the encapsulating material include starches and poly vinyl acetate and urea/formaldehyde condensate based materials. See pg.7, ln.10-16.

Regarding claim 26, Jones et al. teach in compositions for machine washing of fabrics the utility of cationic surfactants. See pg.5 ln.5-15.

In examples 1-5, Jones et al. illustrate a chemical entity comprising more than one chemical components linked to an amino acid sequence comprising a cellulose binding domain as recited by the instant claims. See pages 17-30.

Regarding the linking region, Jones et al. teach non amino acid linking agents as their preferred linking agents (such as 1-ethyl-3-(3-dimethylaminopropyl)) which shows a high affinity for the benefit agent and is covalently attached to the peptide/protein deposition agent. See pg.7, ln.30- pg.8, ln.5.

However, Jones et al. do not specifically teach that the linking region is a polyethylene glycol derivative as recited by the newly amended claim 1.

Cao et al. teach a detergent composition formulated for use in wash water over a wide range of pH in the washing bath. The compositions contain an anionic surfactant, optionally in combination with a nonionic surfactant with optimal builders and enzymes, and also contain at least one water soluble organic polymer, such as polyethylene glycol, which is miscible with or soluble in the surfactant. The presence of the water soluble polymer leads to enhanced fabric cleaning performance. See abstract. In example 1, formulation C and example 2, formulation F, and example 3 formulation H Cao et al. illustrate that the PEG polymer linker not only can bind with conventional molecules such as surfactants and bring them close to the fabric surface, but can "link" also unconventional complex molecules such as enzymes. See col.10-11. Cao et al. suggests the utility of PEG having molecular weight of about 4000 which would encompass the broad range of glycols recited by the instant claims 34-36. In col.8, lines 30-45, Cao et al. teach conventional perfumes and germicides.

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to formulate a laundry care composition comprising a linking region polymer selected from a polyethylene glycol derivative as recited by the instant claim, with a reasonable expectation of success, since the teachings of Jones et al. in combination with Cao et al. suggest a laundry care composition comprising a linking region polymer selected from a polyethylene glycol derivative as recited by the instant claim. Furthermore, one of ordinary skill in the art would have been motivated to combine the teachings of Jones et al. with Cao et al. because both teach the utility of linking agents in general.



13. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (WO 98/00500) in view of Cao et al. (US 6,025,316) as applied to claims 1-7, 9-14, 16, 24-27, 30-36 above, and further in view of Fowler et al. (US 6,268,196)

Jones et al. and Cao et al. are relied upon as set forth above. Jones et al. in view of Cao et al. suggest a laundry care composition comprising a perfume, cellulose binding domain derived from cellulase and a linking region polymer selected from a polyethylene glycol derivative in general.

However, Jones et al. in view of Cao et al. do not specifically teach the limitations of the specific cellulose binding domain is a CBD family 45 from *Humicola insolens* as recited by the instant claim.

Fowler et al. teach many cellulase enzymes, including cellulases from, *T. longibrachiatum* and *Humicola insolens* are known to incorporate a catalytic core domain subunit which is attached via a linker region to a cellulose binding domain subunit. See col.11, ln.50-55.

Thus, it would have been obvious to one of ordinary skill in the art to modify the cellulase binding domain derived from cellulase in general taught by Jones et al. and Cao et al. with the specific cellulase binding domain derived from *Humicola insolens* as taught by Fowler et al. because Fowler et al. teach the utility of cellulases from *Humicola insolens* in an improved method of treating cellulose containing fabric, and Jones et al. suggest a laundry care composition comprising a cellulose binding domain derived from cellulase in general.

***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Preeti Kumar whose telephone number is 571-272-1320. The examiner can normally be reached on M-F 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Preeti Kumar  
Examiner  
Art Unit 1751

PK

A handwritten signature in black ink, appearing to read 'Preeti Kumar', followed by a long horizontal line.